SEQUENCE LISTING

<110> Reiss, Yuval
      Taglight, Daniel N.
      Alroy, Iris
      Tuvia, Shmuel
      Barr, Haim Michael

<120> CBL-B POLYPEPTIDES, COMPLEXES AND
   RELATED METHODS

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65                  70                  75                  80
Trp Lys Pro Gly Pro Gly Gly Ser Gly Thr Asn Cys Thr Asn Ala
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Pro Val Arg Gly Ile Pro Gln Leu Pro Cys Ala Lys Ala Leu Tyr Asn
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Val Lys Asp Lys Glu Ala Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp
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Cys Lys Arg Cys Leu Leu Gly Ile Val Gly Ser Arg Asn Glu Leu Arg
            35                  40                  45
Cys Pro Glu Cys Arg Thr Leu Val Gly Ser Gly Val Glu Glu Leu Pro
    50                  55                  60
Ser Asn Ile Leu Leu Val Arg Leu Leu Asp Gly Ile Lys Gln Arg Pro
65                  70                  75                  80
Trp Lys Pro Gly Pro Gly Gly Gly Ser Gly Thr Asn Cys Thr Asn Ala
                85                  90                  95
Leu Arg Ser Gln Ser Ser Thr Val Ala Asn Cys Ser Ser Lys Asp Leu
            100                 105                 110
Gln Ser Ser Gln Gly Gly Gln Gln Pro Arg Val Gln Ser Trp Ser Pro
            115                 120                 125
Pro Val Arg Gly Ile Pro Gln Leu Pro Cys Ala Lys Ala Leu Tyr Asn
    130                 135                 140
Tyr Glu Gly Lys Glu Pro Gly Asp Leu Lys Phe Ser Lys Gly Asp Ile
145                 150                 155                 160
Ile Ile Leu Arg Arg Gln Val Asp Glu Asn Trp Tyr His Gly Glu Val
            165                 170                 175
Asn Gly Ile His Gly Phe Phe Pro Thr Asn Phe Val Gln Ile Ile Lys
            180                 185                 190
Pro Leu Pro Gln Pro Pro Pro Gln Cys Lys Ala Leu Tyr Asp Phe Glu
            195                 200                 205
Val Lys Asp Lys Glu Ala Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp
    210                 215                 220
Asp Val Leu Thr Val Ile Arg Arg Val Asp Glu Asn Trp Ala Glu Gly
225                 230                 235                 240
Met Leu Ala Asp Lys Ile Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe
                245                 250                 255
Asn Ser Ala Ala Lys Gln Leu Ile Glu Trp Asp Lys Pro Pro Val Pro
            260                 265                 270
Gly Val Asp Ala Gly Glu Cys Ser Ser Ala Ala Ala Gln Ser Ser Thr
            275                 280                 285
Ala Pro Lys His Ser Asp Thr Lys Lys Asn Thr Lys Lys Arg His Ser
    290                 295                 300
Phe Thr Ser Leu Thr Met Ala Asn Lys Ser Ser Gln Ala Ser Gln Asn
305                 310                 315                 320
Arg His Ser Met Glu Ile Ser Pro Pro Val Leu Ile Ser Ser Ser Asn
            325                 330                 335
Pro Thr Ala Ala Ala Arg Ile Ser Glu Leu Ser Gly Leu Ser Cys Ser
            340                 345                 350
Ala Pro Ser Gln Val His Ile Ser Thr Thr Gly Leu Ile Val Thr Pro
            355                 360                 365
Pro Pro Ser Ser Pro Val Thr Thr Gly Pro Ser Phe Thr Phe Pro Ser
    370                 375                 380
Asp Val Pro Tyr Gln Ala Ala Leu Gly Thr Leu Asn Pro Pro Leu Pro
385                 390                 395                 400
Pro Pro Pro Leu Leu Ala Ala Thr Val Leu Ala Ser Thr Pro Pro Gly
                405                 410                 415
```

```
Ala Thr Ala Ala Ala Ala Ala Ala Gly Met Gly Pro Arg Pro Met Ala
        420                     425                 430
Gly Ser Thr Asp Gln Ile Ala His Leu Arg Pro Gln Thr Arg Pro Ser
        435                 440                 445
Val Tyr Val Ala Ile Tyr Pro Tyr Thr Pro Arg Lys Glu Asp Glu Leu
    450                 455                 460
Glu Leu Arg Lys Gly Glu Met Phe Leu Val Phe Glu Arg Cys Gln Asp
465                 470                 475                     480
Gly Trp Phe Lys Gly Thr Ser Met His Thr Ser Lys Ile Gly Val Phe
            485                 490          ·          495
Pro Gly Asn Tyr Val Ala Pro Val Thr Arg Ala Val Thr Asn Ala Ser
            500                 505                 510
Gln Ala Lys Val Pro Met Ser Thr Ala Gly Gln Thr Ser Arg Gly Val
        515                 520                 525
Thr Met Val Ser Pro Ser Thr Ala Gly Gly Pro Ala Gln Lys Leu Gln
    530                 535                 540
Gly Asn Gly Val Ala Gly Ser Pro Ser Val Val Pro Ala Ala Val Val
545                 550                 555                     560
Ser Ala Ala His Ile Gln Thr Ser Pro Gln Ala Lys Val Leu Leu His
            565                 570                 575
Met Thr Gly Gln Met Thr Val Asn Gln Ala Arg Asn Ala Val Arg Thr
            580                 585                 590
Val Ala Ala His Asn Gln Glu Arg Pro Thr Ala Ala Val Thr Pro Ile
        595                 600                 605
Gln Val Gln Asn Ala Ala Gly Leu Ser Pro Ala Ser Val Gly Leu Ser
    610                 615                 620
His His Ser Leu Ala Ser Pro Gln Pro Ala Pro Leu Met Pro Gly Ser
625                 630                 635                     640
Ala Thr His Thr Ala Ala Ile Ser Ile Ser Arg Ala Ser Ala Pro Leu
            645                 650                 655
Ala Cys Ala Ala Ala Ala Pro Leu Thr Ser Pro Ser Ile Thr Ser Ala
            660                 665                 670
Ser Leu Glu Ala Glu Pro Ser Gly Arg Ile Val Thr Val Leu Pro Gly
            675                 680                 685
Leu Pro Thr Ser Pro Asp Ser Ala Ser Ser Ala Cys Gly Asn Ser Ser
    690                 695                 700
Ala Thr Lys Pro Asp Lys Asp Ser
705                 710
```

```
<210> 6
<211> 4182
<212> DNA
<213> Homo sapiens

<400> 6
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aagcactccg acaccaagaa gaacaccaaa aagcggcact ccttcacttc cctcactatg 180
gccaacaagt cctcccaggc atcccagaac cgccactcca tggagatcag ccccccctgtc 240
ctcatcagct ccagcaaccc cactgctgct gcacggatca gcgagctgtc tgggctctcc 300
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gttgctatat atccatacac tcctcggaaa gaggatgaac tagagctgag aaaagggag 660
atgtttttag tgtttgagcg ctgccaggat ggctggttca aagggacatc catgcatacc 720
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```

```
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```

<210> 7

<211> 638
<212> PRT
<213> Homo sapiens

<400> 7

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Asp Lys Pro Pro Val Pro Gly Val Asp Ala Gly Glu Cys Ser Ser Ala
            20                  25                  30
Ala Ala Gln Ser Ser Thr Ala Pro Lys His Ser Asp Thr Lys Lys Asn
            35                  40                  45
Thr Lys Lys Arg His Ser Phe Thr Ser Leu Thr Met Ala Asn Lys Ser
        50                  55                  60
Ser Gln Ala Ser Gln Asn Arg His Ser Met Glu Ile Ser Pro Pro Val
65                  70                  75                  80
Leu Ile Ser Ser Ser Asn Pro Thr Ala Ala Ala Arg Ile Ser Glu Leu
                85                  90                  95
Ser Gly Leu Ser Cys Ser Ala Pro Ser Gln Val His Ile Ser Thr Thr
            100                 105                 110
Gly Leu Ile Val Thr Pro Pro Pro Ser Ser Pro Val Thr Thr Gly Pro
            115                 120                 125
Ser Phe Thr Phe Pro Ser Asp Val Pro Tyr Gln Ala Ala Leu Gly Thr
            130                 135                 140
Leu Asn Pro Pro Leu Pro Pro Pro Leu Leu Ala Ala Thr Val Leu
145                 150                 155                 160
Ala Ser Thr Pro Pro Gly Ala Thr Ala Ala Ala Ala Ala Gly Met
            165                 170                 175
Gly Pro Arg Pro Met Ala Gly Ser Thr Asp Gln Ile Ala His Leu Arg
            180                 185                 190
Pro Gln Thr Arg Pro Ser Val Tyr Val Ala Ile Tyr Pro Tyr Thr Pro
            195                 200                 205
Arg Lys Glu Asp Glu Leu Glu Leu Arg Lys Gly Glu Met Phe Leu Val
        210                 215                 220
Phe Glu Arg Cys Gln Asp Gly Trp Phe Lys Gly Thr Ser Met His Thr
225                 230                 235                 240
Ser Lys Ile Gly Val Phe Pro Gly Asn Tyr Val Ala Pro Val Thr Arg
            245                 250                 255
Ala Val Thr Asn Ala Ser Gln Ala Lys Val Pro Met Ser Thr Ala Gly
            260                 265                 270
Gln Thr Ser Arg Gly Val Thr Met Val Ser Pro Ser Thr Ala Gly Gly
        275                 280                 285
Pro Ala Gln Lys Leu Gln Gly Asn Gly Val Ala Gly Ser Pro Ser Val
        290                 295                 300
Val Pro Ala Ala Val Val Ser Ala Ala His Ile Gln Thr Ser Pro Gln
305                 310                 315                 320
Ala Lys Val Leu Leu His Met Thr Gly Gln Met Thr Val Asn Gln Ala
                325                 330                 335
Arg Asn Ala Val Arg Thr Val Ala Ala His Asn Gln Glu Arg Pro Thr
            340                 345                 350
Ala Ala Val Thr Pro Ile Gln Val Gln Asn Ala Ala Gly Leu Ser Pro
            355                 360                 365
Ala Ser Val Gly Leu Ser His His Ser Leu Ala Ser Pro Gln Pro Ala
    370                 375                 380
Pro Leu Met Pro Gly Ser Ala Thr His Thr Ala Ala Ile Ser Ile Ser
385                 390                 395                 400
Arg Ala Ser Ala Pro Leu Ala Cys Ala Ala Ala Ala Pro Leu Thr Ser
                405                 410                 415
Pro Ser Ile Thr Ser Ala Ser Leu Glu Ala Glu Pro Ser Gly Arg Ile
            420                 425                 430
```

```
Val Thr Val Leu Pro Gly Leu Pro Thr Ser Pro Asp Ser Ala Ser Ser
        435             440             445
Ala Cys Gly Asn Ser Ser Ala Thr Lys Pro Asp Lys Asp Ser Lys Lys
    450             455             460
Glu Lys Lys Gly Leu Leu Lys Leu Leu Ser Gly Ala Ser Thr Lys Arg
465             470             475             480
Lys Pro Arg Val Ser Pro Pro Ala Ser Pro Thr Leu Glu Val Glu Leu
            485             490             495
Gly Ser Ala Glu Leu Pro Leu Gln Gly Ala Val Gly Pro Glu Leu Pro
        500             505             510
Pro Gly Gly Gly His Gly Arg Ala Gly Ser Cys Pro Val Asp Gly Asp
        515             520             525
Gly Pro Val Thr Thr Ala Val Ala Gly Ala Ala Leu Ala Gln Asp Ala
    530             535             540
Phe His Arg Lys Ala Ser Ser Leu Asp Ser Ala Val Pro Ile Ala Pro
545             550             555             560
Pro Pro Arg Gln Ala Cys Ser Ser Leu Gly Pro Val Leu Asn Glu Ser
            565             570             575
Arg Pro Val Val Cys Glu Arg His Arg Val Val Val Ser Tyr Pro Pro
            580             585             590
Gln Ser Glu Ala Glu Leu Glu Leu Lys Glu Gly Asp Ile Val Phe Val
        595             600             605
His Lys Lys Arg Glu Asp Gly Trp Phe Lys Gly Thr Leu Gln Arg Asn
    610             615             620
Gly Lys Thr Gly Leu Phe Pro Gly Ser Phe Val Glu Asn Ile
625             630             635
```


<210> 8
<211> 3206
<212> DNA
<213> Homo sapiens

<400> 8
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gcacaactat gaacgttctg aagccgtttt ctcactaaag tcactcaaga tggatgagtc 180
tgccttgttg gaccttctgg agtgccctgt gtgtctagaa cgcctggatg cttccgcaaa 240
ggtcttaccc tgccagcata ccttttgcaa acgctgtttg ctggggattg tgggttcccg 300
gaatgaactc agatgtcccg aatgccggac tcttgttggc tctggggtcg acgagctccc 360
cagtaacatc ctactggtca gacttctgga tggcatcaag cagaggcctt ggaaacccgg 420
ccctggtggg ggcggcggga ccacctgcac aaacacatta agggcgcagg gcagcactgt 480
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ctacgaagga aaagagcccg gagaccttaa gttcagcaaa ggcgacacca tcattctgcg 660
ccgacaggtg gatgagaatt ggtaccacgg ggaagtcagc ggggtccacg gctttttccc 720
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ttgccaggac ggctggtaca aagggacatc gatgcatacc agcaagatag gcgttttccc 1680
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```

```
<210> 9
<211> 892
<212> PRT
<213> Mouse
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<400> 9
Met Asp Glu Ser Ala Leu Leu Asp Leu Leu Glu Cys Pro Val Cys Leu
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Glu Arg Leu Asp Ala Ser Ala Lys Val Leu Pro Cys Gln His Thr Phe
            20                  25                  30
Cys Lys Arg Cys Leu Leu Gly Ile Val Gly Ser Arg Asn Glu Leu Arg
        35                  40                  45
Cys Pro Glu Cys Arg Thr Leu Val Gly Ser Gly Val Asp Glu Leu Pro
    50                  55                  60
Ser Asn Ile Leu Leu Val Arg Leu Leu Asp Gly Ile Lys Gln Arg Pro
65                  70                  75                  80
Trp Lys Pro Gly Pro Gly Gly Gly Gly Thr Thr Cys Thr Asn Thr
            85                  90                  95
Leu Arg Ala Gln Gly Ser Thr Val Val Asn Cys Gly Ser Lys Asp Leu
            100                 105                 110
Gln Ser Ser Gln Cys Gly Gln Gln Pro Arg Val Gln Ala Trp Ser Pro
        115                 120                 125
Pro Val Arg Gly Ile Pro Gln Leu Pro Cys Ala Lys Ala Leu Tyr Asn
    130                 135                 140
Tyr Glu Gly Lys Glu Pro Gly Asp Leu Lys Phe Ser Lys Gly Asp Thr
145                 150                 155                 160
Ile Ile Leu Arg Arg Gln Val Asp Glu Asn Trp Tyr His Gly Glu Val
                165                 170                 175
```

```
Ser Gly Val His Gly Phe Phe Pro Thr Asn Phe Val Gln Ile Ile Lys
            180                 185                 190
Pro Leu Pro Gln Pro Pro Pro Gln Cys Lys Ala Leu Tyr Asp Phe Glu
            195                 200                 205
Val Lys Asp Lys Glu Ala Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp
    210                 215                 220
Asp Val Leu Thr Val Ile Arg Arg Val Asp Glu Asn Trp Ala Glu Gly
225                 230                 235                 240
Met Leu Ala Asp Lys Ile Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe
            245                 250                 255
Asn Ser Ala Ala Lys Gln Leu Ile Glu Trp Asp Lys Pro Pro Val Pro
            260                 265                 270
Gly Val Asp Thr Ala Glu Cys Pro Ser Ala Thr Ala Gln Ser Thr Ser
    275                 280                 285
Ala Ser Lys His Pro Asp Thr Lys Lys Asn Thr Arg Lys Arg His Ser
    290                 295                 300
Phe Thr Ser Leu Thr Met Ala Asn Lys Ser Ser Gln Gly Ser Gln Asn
305                 310                 315                 320
Arg His Ser Met Glu Ile Ser Pro Pro Val Leu Ile Ser Ser Ser Asn
            325                 330                 335
Pro Thr Ala Ala Ala Arg Ile Ser Glu Leu Ser Gly Leu Ser Cys Ser
            340                 345                 350
Ala Pro Ser Gln Val His Ile Ser Thr Thr Gly Leu Ile Val Thr Pro
    355                 360                 365
Pro Pro Ser Ser Pro Val Thr Thr Gly Pro Ala Phe Thr Phe Pro Ser
    370                 375                 380
Asp Val Pro Tyr Gln Ala Ala Leu Gly Ser Met Asn Pro Pro Leu Pro
385                 390                 395                 400
Pro Pro Pro Leu Leu Ala Ala Thr Val Leu Ala Ser Thr Pro Ser Gly
            405                 410                 415
Ala Thr Ala Ala Val Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly
    420                 425                 430
Met Gly Pro Arg Pro Val Met Gly Ser Ser Glu Gln Ile Ala His Leu
    435                 440                 445
Arg Pro Gln Thr Arg Pro Ser Val Tyr Val Ala Ile Tyr Pro Tyr Thr
    450                 455                 460
Pro Arg Lys Glu Asp Glu Leu Glu Leu Arg Lys Gly Glu Met Phe Leu
465                 470                 475                 480
Val Phe Glu Arg Cys Gln Asp Gly Trp Tyr Lys Gly Thr Ser Met His
            485                 490                 495
Thr Ser Lys Ile Gly Val Phe Pro Gly Asn Tyr Val Ala Pro Val Thr
            500                 505                 510
Arg Ala Val Thr Asn Ala Ser Gln Ala Lys Val Ser Met Ser Thr Ala
    515                 520                 525
Gly Gln Ala Ser Arg Gly Val Thr Met Val Ser Pro Ser Thr Ala Gly
    530                 535                 540
Gly Pro Thr Gln Lys Pro Gln Gly Asn Gly Val Ala Gly Asn Pro Ser
545                 550                 555                 560
Val Val Pro Thr Ala Val Val Ser Ala Ala His Ile Gln Thr Ser Pro
            565                 570                 575
Gln Ala Lys Val Leu Leu His Met Ser Gly Gln Met Thr Val Asn Gln
            580                 585                 590
Ala Arg Asn Ala Val Arg Thr Val Ala Ala His Ser Gln Glu Arg Pro
            595                 600                 605
Thr Ala Ala Val Thr Pro Ile Gln Val Gln Asn Ala Ala Cys Leu Gly
    610                 615                 620
Pro Ala Ser Val Gly Leu Pro His His Ser Leu Ala Ser Gln Pro Leu
625                 630                 635                 640
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Pro Pro Met Ala Gly Pro Ala Ala His Gly Ala Ala Val Ser Ile Ser
            645             650                     655
Arg Thr Asn Ala Pro Met Ala Cys Ala Ala Gly Ala Ser Leu Ala Ser
            660             665                     670
Pro Asn Met Thr Ser Ala Met Leu Glu Thr Glu Pro Ser Gly Arg Thr
            675             680                     685
Val Thr Ile Leu Pro Gly Leu Pro Thr Ser Pro Glu Ser Ala Ala Ser
            690             695                     700
Ala Cys Gly Asn Ser Ser Ala Gly Lys Pro Asp Lys Asp Ser Lys Lys
705                     710             715                     720
Glu Lys Lys Gly Leu Leu Lys Leu Leu Ser Gly Ala Ser Thr Lys Arg
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Lys Pro Arg Val Ser Pro Pro Ala Ser Pro Thr Leu Asp Val Glu Leu
                740             745                     750
Gly Ala Gly Glu Ala Pro Leu Gln Gly Ala Val Gly Pro Glu Leu Pro
                755             760                     765
Leu Gly Gly Ser His Gly Arg Val Gly Ser Cys Pro Thr Asp Gly Asp
        770             775             780
Gly Pro Val Ala Ala Gly Thr Ala Ala Leu Ala Gln Asp Ala Phe His
785                     790             795                     800
Arg Lys Thr Ser Ser Leu Asp Ser Ala Val Pro Ile Ala Pro Pro Pro
                805             810                     815
Arg Gln Ala Cys Ser Ser Leu Gly Pro Val Met Asn Glu Ala Arg Pro
                820             · 825                   830
Val Val Cys Glu Arg His Arg Val Val Val Ser Tyr Pro Pro Gln Ser
                835             840             845
Glu Ala Glu Leu Glu Leu Lys Glu Gly Asp Ile Val Phe Val His Lys
        850             855             860
Lys Arg Glu Asp Gly Trp Phe Lys Gly Thr Leu Gln Arg Asn Gly Lys
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Thr Gly Leu Phe Pro Gly Ser Phe Val Glu Asn Ile
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<210> 10
<211> 3149
<212> DNA
<213> Drosophila melanogaster

<400> 10
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<210> 11
<211> 838
<212> PRT
<213> Drosophila melanogaster

<400> 11

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            20                  25                  30
Cys Arg Lys Cys Leu Gln Asp Ile Val Ala Ser Gln His Lys Leu Arg
        35                  40                  45
Cys Pro Glu Cys Arg Ile Leu Val Ser Cys Lys Ile Asp Glu Leu Pro
    50                  55                  60
Pro Asn Val Leu Leu Met Arg Ile Leu Glu Gly Met Lys Gln Asn Ala
65                  70                  75                  80
Ala Ala Gly Lys Gly Glu Glu Lys Gly Glu Glu Thr Glu Thr Gln Pro
                85                  90                  95
Glu Arg Ala Lys Pro Gln Pro Pro Ala Glu Ser Val Ala Pro Pro Asp
            100                 105                 110
Asn Gln Leu Leu Gln Leu Gln Ser His Gln Gln Ser His Gln Pro Ala
        115                 120                 125
Arg His Lys Gln Arg Arg Phe Leu Leu Pro His Ala Tyr Ala Leu Phe
    130                 135                 140
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```
Asp Phe Ala Ser Gly Glu Ala Thr Asp Leu Lys Phe Lys Lys Gly Asp
145             150             155             160
Leu Ile Leu Ile Lys His Arg Ile Asp Asn Asn Trp Phe Val Gly Gln
            165             170             175
Ala Asn Gly Gln Glu Gly Thr Phe Pro Ile Asn Tyr Val Lys Val Ser
        180             185             190
Val Pro Leu Pro Met Pro Gln Cys Ile Ala Met Tyr Asp Phe Lys Met
        195             200             205
Gly Pro Asn Asp Glu Glu Gly Cys Leu Glu Phe Lys Lys Ser Thr Val
    210             215             220
Ile Gln Val Met Arg Arg Val Asp His Asn Trp Ala Glu Gly Arg Ile
225             230             235             240
Gly Gln Thr Ile Gly Ile Phe Pro Ile Ala Phe Val Glu Leu Asn Ala
            245             250             255
Ala Ala Lys Lys Leu Leu Asp Ser Gly Leu His Thr His Pro Phe Cys
        260             265             270
His Pro Pro Lys Gln Gln Gly Gln Arg Ala Leu Pro Pro Val Pro Val
        275             280             285
Ile Asp Pro Thr Val Val Thr Glu Ser Ser Ser Gly Ser Ser Asn Ser
    290             295             300
Thr Pro Gly Ser Ser Asn Ser Ser Ser Thr Ser Ser Ser Asn Asn Cys
305             310             315             320
Ser Pro Asn His Gln Ile Ser Leu Pro Asn Thr Pro Gln His Val Val
            325             330             335
Ala Ser Gly Ser Ala Ser Val Arg Phe Arg Asp Lys Gly Ala Lys Glu
        340             345             350
Lys Arg His Ser Leu Asn Ala Leu Leu Gly Gly Gly Ala Pro Leu Ser
        355             360             365
Leu Leu Gln Thr Asn Arg His Ser Ala Glu Ile Leu Ser Leu Pro His
    370             375             380
Glu Leu Ser Arg Leu Glu Val Ser Ser Ser Thr Ala Leu Lys Pro Thr
385             390             395             400
Ser Ala Pro Gln Thr Ser Arg Val Leu Lys Thr Thr Val Gln Gln Gln
            405             410             415
Met Gln Pro Asn Leu Pro Trp Gly Tyr Leu Ala Leu Phe Pro Tyr Lys
        420             425             430
Pro Arg Gln Thr Asp Glu Leu Glu Leu Lys Lys Gly Cys Val Tyr Ile
        435             440             445
Val Thr Glu Arg Cys Val Asp Gly Trp Phe Lys Gly Lys Asn Trp Leu
    450             455             460
Asp Ile Thr Gly Val Phe Pro Gly Asn Tyr Leu Thr Pro Leu Arg Ala
465             470             475             480
Arg Asp Gln Gln Gln Leu Met His Gln Trp Lys Tyr Val Pro Gln Asn
            485             490             495
Ala Asp Ala Gln Met Ala Gln Val Gln Gln His Pro Val Ala Pro Asp
        500             505             510
Val Arg Leu Asn Asn Met Leu Ser Met Gln Pro Pro Asp Leu Pro Pro
        515             520             525
Arg Gln Gln Gln Ala Thr Ala Thr Thr Thr Ser Cys Ser Val Trp Ser
    530             535             540
Lys Pro Val Glu Ala Leu Phe Ser Arg Lys Ser Glu Pro Lys Pro Glu
545             550             555             560
Thr Ala Thr Ala Ser Thr Thr Ser Ser Ser Ser Ser Gly Ala Val Gly
            565             570             575
Leu Met Arg Arg Leu Thr His Met Lys Thr Arg Ser Lys Ser Pro Gly
        580             585             590
Ala Ser Leu Gln Gln Val Pro Lys Glu Ala Ile Ser Thr Asn Val Glu
        595             600             605
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Phe Thr Thr Asn Pro Ser Ala Lys Leu His Pro Val His Val Arg Ser
    610             615             620
Gly Ser Cys Pro Ser Gln Leu Gln His Ser Gln Pro Leu Asn Glu Thr
625             630             635             640
Pro Ala Ala Lys Thr Ala Ala Gln Gln Gln Phe Leu Pro Lys Gln
            645             650             655
Leu Pro Ser Ala Ser Thr Asn Ser Val Ser Tyr Gly Ser Gln Arg Val
            660             665             670
Lys Gly Ser Lys Glu Arg Pro His Leu Ile Cys Ala Arg Gln Ser Leu
            675             680             685
Asp Ala Ala Thr Phe Arg Ser Met Tyr Asn Asn Ala Ala Ser Pro Pro
    690             695             700
Pro Pro Thr Thr Ser Val Ala Pro Ala Val Tyr Ala Gly Gly Gln Gln
705             710             715             720
Gln Val Ile Pro Gly Gly Gly Ala Gln Ser Gln Leu His Ala Asn Met
            725             730             735
Ile Ile Ala Pro Ser His Arg Lys Ser His Ser Leu Asp Ala Ser His
            740             745             750
Val Leu Ser Pro Ser Ser Asn Met Ile Thr Glu Ala Ala Ile Lys Ala
            755             760             765
Ser Ala Thr Thr Lys Ser Pro Tyr Cys Thr Arg Glu Ser Arg Phe Arg
    770             775             780
Cys Ile Val Pro Tyr Pro Pro Asn Ser Asp Ile Glu Leu Glu Leu His
785             790             795             800
Leu Gly Asp Ile Ile Tyr Val Gln Arg Lys Gln Lys Asn Gly Trp Tyr
            805             810             815
Lys Gly Thr His Ala Arg Thr His Lys Thr Gly Leu Phe Pro Ala Ser
            820             825             830
Phe Val Glu Pro Asp Cys
            835
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<212> DNA
<213> Homo sapiens

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<210> 13
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<212> DNA
<213> Homo sapiens

<400> 13
ctgccagcat tccttcag   18

<210> 14
<211> 21
<212> DNA
<213> Homo sapiens

<400> 14
aacagaggcc ttggaaacct g   21

<210> 15
<211> 21
<212> DNA

<213> Homo sapiens

<400> 15
ttcagaggcc uuggaaaccu g   21

<210> 16
<211> 21
<212> DNA
<213> Homo sapiens

<400> 16
ttcagguuuc caaggccucu g   21

<210> 17
<211> 21
<212> DNA
<213> Homo sapiens

<400> 17
aaagagcctg gagaccttaa a   21

<210> 18
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<212> DNA
<213> Homo sapiens

<400> 18
ttagagccug gagaccuuaa a   21

<210> 19
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<212> DNA
<213> Homo sapiens

<400> 19
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<210> 20
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<212> DNA
<213> Homo sapiens

<400> 20
aaggattggt atgtgactct g   21

<210> 21
<211> 21
<212> DNA
<213> Homo sapiens

<400> 21
ttggauuggu augugacucu g   21

<210> 22
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<212> DNA
<213> Homo sapiens

<400> 22

ttcagaguca cauaccaauc c   21

<210> 23
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<212> DNA
<213> Homo sapiens

<400> 23
aagctggatt atctcctgtt g   21

<210> 24
<211> 21
<212> DNA
<213> Homo sapiens

<400> 24
ttgcuggauu aucuccuguu g   21

<210> 25
<211> 21
<212> DNA
<213> Homo sapiens

<400> 25
ttcaacagga gauaauccag c   21

<210> 26
<211> 41
<212> PRT
<213> Homo sapiens

<400> 26
Cys Pro Val Cys Leu Glu Arg Leu Asp Ala Ser Ala Lys Val Leu Pro
1   5   10   15
Cys Gln His Thr Phe Cys Lys Arg Cys Leu Leu Gly Ile Val Gly Ser
            20   25   30
Arg Asn Glu Leu Arg Cys Pro Glu Cys
        35   40

<210> 27
<211> 56
<212> PRT
<213> Homo sapiens

<400> 27
Pro Cys Ala Lys Ala Leu Tyr Asn Tyr Glu Gly Lys Glu Pro Gly Asp
1   5   10   15
Leu Lys Phe Ser Lys Gly Asp Ile Ile Ile Leu Arg Arg Gln Val Asp
            20   25   30
Glu Asn Trp Tyr His Gly Glu Val Asn Gly Ile His Gly Phe Phe Pro
            35   40   45
Thr Asn Phe Val Gln Ile Ile Lys
        50   55

<210> 28
<211> 60
<212> PRT

<213> Homo sapiens

<400> 28
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Pro Gln Cys Lys Ala Leu Tyr Asp Phe Glu Val Lys Asp Lys Glu Ala
 1               5                  10                  15
Asp Lys Asp Cys Leu Pro Phe Ala Lys Asp Asp Val Leu Thr Val Ile
            20                  25                  30
Arg Arg Val Asp Glu Asn Trp Ala Glu Gly Met Leu Ala Asp Lys Ile
        35                  40                  45
Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe Asn Ser
    50                  55                  60
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<210> 29
<211> 58
<212> PRT
<213> Homo sapiens

<400> 29
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Ser Val Tyr Val Ala Ile Tyr Pro Tyr Thr Pro Arg Lys Glu Asp Glu
 1               5                  10                  15
Leu Glu Leu Arg Lys Gly Glu Met Phe Leu Val Phe Glu Arg Cys Gln
            20                  25                  30
Asp Gly Trp Phe Lys Gly Thr Ser Met His Thr Ser Lys Ile Gly Val
        35                  40                  45
Phe Pro Gly Asn Tyr Val Ala Pro Val Thr
    50                  55
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<210> 30
<211> 57
<212> PRT
<213> Homo sapiens

<400> 30
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Glu Arg His Arg Val Val Val Ser Tyr Pro Pro Gln Ser Glu Ala Glu
 1               5                  10                  15
Leu Glu Leu Lys Glu Gly Asp Ile Val Phe Val His Lys Lys Arg Glu
            20                  25                  30
Asp Gly Trp Phe Lys Gly Thr Leu Gln Arg Asn Gly Lys Thr Gly Leu
        35                  40                  45
Phe Pro Gly Ser Phe Val Glu Asn Ile
    50                  55
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<210> 31
<211> 121
<212> DNA
<213> Homo sapiens

<400> 31
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<210> 32
<211> 165
<212> DNA
<213> Homo sapiens

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aatggaatcc atggcttttt ccccaccaac tttgtgcaga ttatt 165

<210> 33
<211> 177
<212> DNA
<213> Homo sapiens

<400> 33
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cttccatttg caaaggatga tgttctgact gtgatccgaa gagtggatga aaactgggct 120
gaaggaatgc tggcagacaa aataggaata tttccaattt catatgttga gtttaac 177

<210> 34
<211> 171
<212> DNA
<213> Homo sapiens

<400> 34
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<210> 35
<211> 169
<212> DNA
<213> Homo sapiens

<400> 35
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caacgtaatg ggaaaactgg ccttttccca ggaagctttg tggaaaaca 169

<210> 36
<211> 21
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<220>
<223> target sequence

<400> 36
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<210> 37
<211> 3354
<212> DNA
<213> Homo sapiens

<400> 37
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gtgccctcgg gatgtgtttg ggactaatca gcttgtggga tgtcgactcc taggggaggg 2160
ctctccaaaa cctggaatca cagcgagttc aaatgtcaat ggaaggcaca gtagagtggg 2220
ctctgaccca gtgcttatgc ggaaacacag acgccatgat ttgcctttag aaggagctaa 2280
ggtcttttcc aatggtcacc ttggaagtga agaatatgat gttcctcccc ggctttctcc 2340
tcctcctcca gttaccaccc tcctccctag cataaagtgt actggtccgt tagcaaattc 2400
tctttcagag aaaacaagag acccagtaga ggaagatgat gatgaataca agattccttc 2460
atcccaccct gtttccctga attcacaacc atctcattgt cataatgtaa aacctcctgt 2520
tcggtcctgt gataatggtc actgtatgct gaatggaaca catggtccat cttcagagaa 2580
gaaatcaaac atccctgact taagcatata tttaaagggt acgtatagaa tataatttcc 2640
tttgtgatgt acatcttaat ggtcagaatt taaaggcaaa atttcatgcc attgtactga 2700
aaatacatta aggttttgtg ttatcctcta ggagatgttt ttgattcagc ctctgatccc 2760
gtgccattac cacctgccag gcctccaact cgggacaatc caaagcatgg ttcttcactc 2820
aacaggacgc cctctgatta tgatcttctc atccctccat taggttgaaa cctttaaaaa 2880
agttttgaac aacccacccc tccttctttt aatttcagaa ttttcagaat tcagagttca 2940
gtataacaca gactcactgg gttgtgaatt tgcctgaaat ttgaatgggt tctccaggtg 3000
ccggtgactc ccaagttcac gagaccatta ctccatgtag atgattaagg tagtagtgta 3060
gtagttgggc atcagtcagg ttttaagcaa gttgttttgt ccatactaaa tgtagtctaa 3120
aaacacatga gagctttgtg ctctagtagt tttgaagtga tgacttgaag tgttgagatt 3180
ttctttaagt ataataattc ttaataaata tgaacttgct tttcttgcag catgagcacc 3240
agttccactt acgctaatta aattatgcaa aattaaatag ttgtatgtag agaactgata 3300
ataaattctg ttttattcta atcattacaa ctgtaacaca ttcaaaaaaa aaaa      3354
```

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<210> 42
<211> 2088
<212> DNA
<213> Homo sapiens

<400> 42
agtgctgctg cggcgtcccg cggcctcccc gagtcgggcg ggaggggaga gcgggtgtgg 60
atttgtcttg acggtaattg ttgcgtttcc acgtctcgga ggcctgcgcg ctgggttgct 120
ccttcttcgg gagcgagctg ttctcagcga tcccactccc agccggggct ccccacacac 180
actgggctgc gtgcgtgtgg agtgggaccc gcgcacacgc gtgtctctgg acagctacgg 240
cgccgaaaga actaaaattc cagatggcaa actcaatgaa tggcagaaac cctggtggtc 300
gaggaggaaa tccccgaaaa ggtcgaattt tgggtattat tgatgctatt caggatgcag 360
ttggaccccc taagcaagct gccgcagatc gcaaaacctg gaatcacagc gagttcaaat 420
gtcaatggaa ggcacagtag agtgggctct gacccagtgc ttatgcggaa acacagacgc 480
catgatttgc ctttagaagg agctaaggtc ttttccaatg gtcaccttgg aagtgaagaa 540
tatgatgttc ctccccggct ttctcctcct cctccagtta ccaccctcct ccctagcata 600
aagtgtactg gtccgttagc aaattctctt tcagagaaaa caagagaccc agtagaggaa 660
gatgatgatg aatacaagat tccttcatcc caccctgttt ccctgaattc acaaccatct 720
cattgtcata atgtaaaacc tcctgttcgg tcttgtgata atggtcactg tatgctgaat 780
ggaacacatg gtccatcttc agagaagaaa tcaaacatcc ctgacttaag catatattta 840
aagggagatg tttttgattc agcctctgat cccgtgccat taccacctgc caggcctcca 900
actcgggaca atccaaagca tggttcttca ctcaacagga cgccctctga ttatgatctt 960
ctcatccctc cattaggtga agatgctttt gatgccctcc tccatctct cccacctccc 1020
ccacctcctg caaggcatag tctcattgaa cattcaaaac ctcctggctc cagtagccgg 1080
ccatcctcag dacaggatct ttttcttctt ccttcagatc cctttgttga tctagcaagt 1140
ggccaagttc cctttgcctcc tgctagaagg ttaccaggtg aaaatgtcaa aactaacaga 1200
acatcacagg actatgatca gcttccttca tgttcagatg gttcacaggc atcagccaga 1260
cccctaaac cacgaccgcg caggactgca ccagaaattc accacagaaa accccatggg 1320
cctgaggcgg cattggaaaa tgtcgatgca aaaattgcaa aactcatggg agagggttat 1380
gcctttgaag aggtgaagag agccttagag atagcccaga ataatgtcga agttgcccgg 1440
agcatcctcc gagaatttgc cttccctcct ccagtatccc cacgtctaaa tctatagcag 1500
ccagaactgt agacaccaaa atggaaagca atcgatgtat ccaagagtg tggaaataaa 1560
```

```
gagaactgag atggaattca agagagaagt gtctcctcct cgtgtagcag cttgagaaga 1620
ggcttgggag tgcagcttct caaaggagac cgatgcttgc tcaggatgtc gacagctgtg 1680
gcttccttgt ttttgctagc catattttta aatcagggtt gaactgacaa aaataattta 1740
aagacgttta cttcccttga actttgaacc tgtgaaatgc tttaccttgt ttacagtttg 1800
gcaaagttgc agtttgttct tgtttttagt ttagtttttgt tttggtgttt tgtacctgta 1860
ctgtgttctt cacagaccct ttgtagcgtg gtcaggtctg ctgtaacatt tcccaccaac 1920
tctcttgctg tccacatcaa cagctaaatc atttattcat atggatctct accatcccca 1980
tgccttgccc aggtccagtt ccatttctct cattcacaag atgctttgaa ggttctgatt 2040
ttcaactgat caaactaatg caaaaaaaaa aaaaaaaaa aaaaaag           2088
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<210> 43
<211> 1446
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> 4, 10, 12, 13, 58, 74, 136, 206, 222, 237, 254, 385, 1336,
1344, 1347, 1350, 1380, 1392, 1395, 1400, 1445
<223> n = A,T,C or G

<400> 43
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cgtntttggn anncactaca ggggatgttt aatacacact cacaatgcgc atgatgtnta 60
taactatcta ttcnatgatg taagataccc cactcaaacc cataaaaaag agcatcttta 120
atacgactca ctatanggcg agcgcacgcc atggcaggta cccatacgac gtaccagatt 180
acgctcatat ggccatggag gccagngaat tccacccaag cngtggtatc aacgcanagt 240
ggactctgac ccantgctta tgcggaaaca cagacgccat gatttgcctt tagaaggagc 300
taaggtctct tccaatggtc accttggaag tgaagaatat gatgttcctc cccggctttc 360
tcctcctcct ccagttacca ccctnctccc tagcataaag tgtactggtc cgttagcaaa 420
ttctctttca gagaaaacaa gagacccagt agaggaagat gatgatgaat acaagattcc 480
ttcatcccac cctgtttccc tgaattcaca accatctcat tgtcataatg taaaacctcc 540
tgttcggtct tgtgataatg gtcactgtat gctgaatgga acacatggtc catcttcaga 600
gaagaaatca aacatccctg acttaagcat atatttaaag ggtgaagatg cttttgatgc 660
cctccctcca tctctcccac ctcccccacc tcctgcaagg catagtctca ttgaacattc 720
aaaacctcct ggctccagta gccggccatc ctcaggacag gatctttttc ttcttccttc 780
agatcccttt gttgatctag caagtggcca agttcctttg cctcccgcta gaaggttacc 840
aggtgaaaat gtcaaaacta acaggacatc acaggactat gatcagcttc cttcatgttc 900
agatggttca caggcaccag ccagacccc taaaccacga ccgcgcagga ctgcaccaga 960
aattcaccac agaaaacccc atgggcctga ggcggcattg gaaaatgtcg atgcaaaaat 1020
tgcaaaactc atgggagagg gttatgcctt tgaagaggtg aagagagcct tagagatagc 1080
ccagaataat gtcgaagttg cccggagcat cctccgagaa tttgccttcc ctcctccagt 1140
atccccacgt ctaaatctat agcagccaga actgtagaca ccaaaatgga aagcaatcga 1200
tgtattccaa gagtgtggaa ataaagagaa ctgagatgga attcaagaga gaagtgtctc 1260
ctcctcgtgt agcagcttga gaagaggctt gggagtgcag cttctcaaag aaaaccgatg 1320
cttgctcagg atgtcnacag ctgnggnctn ccttgttttt gctagccatt tttttaaatn 1380
agggttgaac tnganaaaan tatttaaaaa cgtttacctc ccttgaactt tgaacctggg 1440
aaagnc                                                       1446
```

<210> 44
<211> 1203
<212> DNA
<213> Homo sapiens

<400> 44
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actctgaccc agtgcttatg cggaaacaca gacgccatga tttgccttta gaaggagcta 60
aggtctcttc caatggtcac cttggaagtg aagaatatga tgttcctccc cggctttctc 120
ctcctcctcc agttaccacc ctcctcccta gcataaagtg tactggtccg ttagcaaatt 180
ctctttcaga gaaaacaaga gacccagtag aggaagatga tgatgaatac aagattcctt 240
catcccaccc tgtttccctg aattcacaac catctcattg tcataatgta aaacctcctg 300
```

```
ttcggtcttg tgataatggt cactgtatgc tgaatggaac acatggtcca tcttcagaga  360
agaaatcaaa catccctgac ttaagcatat atttaaaggg tgaagatgct tttgatgccc  420
tccctccatc tctcccacct cccccacctc ctgcaaggca tagtctcatt gaacattcaa  480
aacctcctgg ctccagtagc cggccatcct caggacagga tctttttctt cttccttcag  540
atccctttgt tgatctagca agtggccaag ttcctttgcc tcccgctaga aggttaccag  600
gtgaaaatgt caaaactaac aggacatcac aggactatga tcagcttcct tcatgttcag  660
atggttcaca ggcaccagcc agacccccta aaccacgacc gcgcaggact gcaccagaaa  720
ttcaccacag aaaaccccat gggcctgagg cggcattgga aaatgtcgat gcaaaaattg  780
caaaactcat gggagagggt tatgcctttg aagaggtgaa gagagcctta gagatagccc  840
agaataatgt cgaagttgcc cggagcatcc tccgagaatt tgccttccct cctccagtat  900
ccccacgtct aaatctatag cagccagaac tgtagacacc aaaatggaaa gcaatcgatg  960
tattccaaga gtgtggaaat aaagagaact gagatggaat tcaagagaga agtgtctcct 1020
cctcgtgtag cagcttgaga agaggcttgg gagtgcagct tctcaaagaa aaccgatgct 1080
tgctcaggat gtcgacagct gtggcttcct tgttttgct agccattttt ttaaatcagg 1140
gttgaactgg aaaaaattat ttaaaaacgt ttacctccct tgaactttga acctgggaaa 1200
ggc                                                              1203
```

```
<210> 45
<211> 300
<212> PRT
<213> Homo sapiens
```

```
<400> 45
Met Arg Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val
 1               5                  10                  15
Ser Ser Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg
            20                  25                  30
Leu Ser Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys
        35                  40                  45
Thr Gly Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val
    50                  55                  60
Glu Glu Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser
65                  70                  75                  80
Leu Asn Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg
                85                  90                  95
Ser Cys Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser
            100                 105                 110
Ser Glu Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly
            115                 120                 125
Glu Asp Ala Phe Asp Ala Leu Pro Pro Ser Leu Pro Pro Pro Pro Pro
    130                 135                 140
Pro Ala Arg His Ser Leu Ile Glu His Ser Lys Pro Pro Gly Ser Ser
145                 150                 155                 160
Ser Arg Pro Ser Ser Gly Gln Asp Leu Phe Leu Leu Pro Ser Asp Pro
                165                 170                 175
Phe Val Asp Leu Ala Ser Gly Gln Val Pro Leu Pro Pro Ala Arg Arg
            180                 185                 190
Leu Pro Gly Glu Asn Val Lys Thr Asn Arg Thr Ser Gln Asp Tyr Asp
            195                 200                 205
Gln Leu Pro Ser Cys Ser Asp Gly Ser Gln Ala Pro Ala Arg Pro Pro
    210                 215                 220
Lys Pro Arg Pro Arg Arg Thr Ala Pro Glu Ile His His Arg Lys Pro
225                 230                 235                 240
His Gly Pro Glu Ala Ala Leu Glu Asn Val Asp Ala Lys Ile Ala Lys
                245                 250                 255
Leu Met Gly Glu Gly Tyr Ala Phe Glu Glu Val Lys Arg Ala Leu Glu
            260                 265                 270
Ile Ala Gln Asn Asn Val Glu Val Ala Arg Ser Ile Leu Arg Glu Phe
    275                 280                 285
```

Ala Phe Pro Pro Pro Val Ser Pro Arg Leu Asn Leu
    290   295   300

<210> 46
<211> 250
<212> PRT
<213> Homo sapiens

<400> 46
Ser Asp Pro Val Leu Met Arg Lys His Arg Arg His Asp Leu Pro Leu
 1   5   10   15
Glu Gly Ala Lys Val Ser Ser Asn Gly His Leu Gly Ser Glu Glu Tyr
             20   25   30
Asp Val Pro Pro Arg Leu Ser Pro Pro Pro Val Thr Thr Leu Leu
         35   40   45
Pro Ser Ile Lys Cys Thr Gly Pro Leu Ala Asn Ser Leu Ser Glu Lys
     50   55   60
Thr Arg Asp Pro Val Glu Glu Asp Asp Glu Tyr Lys Ile Pro Ser
65   70   75   80
Ser His Pro Val Ser Leu Asn Ser Gln Pro Ser His Cys His Asn Val
             85   90   95
Lys Pro Pro Val Arg Ser Cys Asp Asn Gly His Cys Met Leu Asn Gly
         100   105   110
Thr His Gly Pro Ser Ser Glu Lys Lys Ser Asn Ile Pro Asp Leu Ser
         115   120   125
Ile Tyr Leu Lys Gly Glu Asp Ala Phe Asp Ala Leu Pro Pro Ser Leu
     130   135   140
Pro Pro Pro Pro Pro Pro Ala Arg His Ser Leu Ile Glu His Ser Lys
145   150   155   160
Pro Pro Gly Ser Ser Ser Arg Pro Ser Ser Gly Gln Asp Leu Phe Leu
             165   170   175
Leu Pro Ser Asp Pro Phe Val Asp Leu Ala Ser Gly Gln Val Pro Leu
         180   185   190
Pro Pro Ala Arg Arg Leu Pro Gly Glu Asn Val Lys Thr Asn Arg Thr
         195   200   205
Ser Gln Asp Tyr Asp Gln Leu Pro Ser Cys Ser Asp Gly Ser Gln Ala
     210   215   220
Pro Ala Arg Pro Pro Lys Pro Arg Pro Arg Arg Thr Ala Pro Glu Ile
225   230   235   240
His His Arg Lys Pro His Gly Pro Glu Ala
             245   250

<210> 47
<211> 770
<212> PRT
<213> Homo sapiens

<400> 47
Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
 1   5   10   15
Pro Arg Lys Gly Arg Ile Leu Gly Ile Ile Asp Ala Ile Gln Asp Ala
             20   25   30
Val Gly Pro Pro Lys Gln Ala Ala Ala Asp Arg Arg Thr Val Glu Lys
             35   40   45
Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
     50   55   60

```
Leu Gln Leu Lys Asn Ser Pro Pro Tyr Ile Leu Asp Ile Leu Pro Asp
65              70              75                      80
Thr Tyr Gln His Leu Arg Leu Ile Leu Ser Lys Tyr Asp Asp Asn Gln
            85              90                      95
Lys Leu Ala Gln Leu Ser Glu Asn Glu Tyr Phe Lys Ile Tyr Ile Asp
            100             105             110
Ser Leu Met Lys Lys Ser Lys Arg Ala Ile Arg Leu Phe Lys Glu Gly
        115             120             125
Lys Glu Arg Met Tyr Glu Glu Gln Ser Gln Asp Arg Arg Asn Leu Thr
    130             135             140
Lys Leu Ser Leu Ile Phe Ser His Met Leu Ala Glu Ile Lys Ala Ile
145             150             155             160
Phe Pro Asn Gly Gln Phe Gln Gly Asp Asn Phe Arg Ile Thr Lys Ala
            165             170             175
Asp Ala Ala Glu Phe Trp Arg Lys Phe Phe Gly Asp Lys Thr Ile Val
        180             185             190
Pro Trp Lys Val Phe Arg Gln Cys Leu His Glu Val His Gln Ile Ser
        195             200             205
Ser Ser Leu Glu Ala Met Ala Leu Lys Ser Thr Ile Asp Leu Thr Cys
    210             215             220
Asn Asp Tyr Ile Ser Val Phe Glu Phe Asp Ile Phe Thr Arg Leu Phe
225             230             235             240
Gln Pro Trp Gly Ser Ile Leu Arg Asn Trp Asn Phe Leu Ala Val Thr
            245             250             255
His Pro Gly Tyr Met Ala Phe Leu Thr Tyr Asp Glu Val Lys Ala Arg
            260             265             270
Leu Gln Lys Tyr Ser Thr Lys Pro Gly Ser Tyr Ile Phe Arg Leu Ser
    275             280             285
Cys Thr Arg Leu Gly Gln Trp Ala Ile Gly Tyr Val Thr Gly Asp Gly
    290             295             300
Asn Ile Leu Gln Thr Ile Pro His Asn Lys Pro Leu Phe Gln Ala Leu
305             310             315             320
Ile Asp Gly Ser Arg Glu Gly Phe Tyr Leu Tyr Pro Asp Gly Arg Ser
            325             330             335
Tyr Asn Pro Asp Leu Thr Gly Leu Cys Glu Pro Thr Pro His Asp His
            340             345             350
Ile Lys Val Thr Gln Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly Ser
            355             360             365
Thr Phe Gln Leu Cys Lys Ile Cys Ala Glu Asn Asp Lys Asp Val Lys
    370             375             380
Ile Glu Pro Cys Gly His Leu Met Cys Thr Ser Cys Leu Thr Ala Trp
385             390             395             400
Gln Glu Ser Asp Gly Gln Gly Cys Pro Phe Cys Arg Cys Glu Ile Lys
            405             410             415
Gly Thr Glu Pro Ile Ile Val Asp Pro Phe Asp Pro Arg Asp Glu Gly
            420             425             430
Ser Arg Cys Cys Ser Ile Ile Asp Pro Phe Gly Met Pro Met Leu Asp
            435             440             445
Leu Asp Asp Asp Asp Asp Arg Glu Glu Ser Leu Met Met Asn Arg Leu
    450             455             460
Ala Asn Val Arg Lys Cys Thr Asp Arg Gln Asn Ser Pro Val Thr Ser
465             470             475             480
Pro Gly Ser Ser Pro Leu Ala Gln Arg Arg Lys Pro Gln Pro Asp Pro
            485             490             495
Leu Gln Ile Pro His Leu Ser Leu Pro Pro Val Pro Pro Arg Leu Asp
            500             505             510
Leu Ile Gln Lys Gly Ile Val Arg Ser Pro Cys Gly Ser Pro Thr Gly
    515             520             525
```

Ser Pro Lys Ser Ser Pro Cys Met Val Arg Lys Gln Asp Lys Pro Leu
    530   535   540
Pro Ala Pro Pro Pro Pro Leu Arg Asp Pro Pro Pro Pro Pro Pro Glu
545   550   555   560
Arg Pro Pro Pro Ile Pro Pro Asp Asn Arg Leu Ser Arg His Ile His
            565   570   575
His Val Glu Ser Val Pro Ser Arg Asp Pro Pro Met Pro Leu Glu Ala
        580   585   590
Trp Cys Pro Arg Asp Val Phe Gly Thr Asn Gln Leu Val Gly Cys Arg
        595   600   605
Leu Leu Gly Glu Gly Ser Pro Lys Pro Gly Ile Thr Ala Ser Ser Asn
    610   615   620
Val Asn Gly Arg His Ser Arg Val Gly Ser Asp Pro Val Leu Met Arg
625   630   635   640
Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val Phe Ser
            645   650   655
Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg Leu Ser
            660   665   670
Pro Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys Thr Gly
            675   680   685
Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val Glu Glu
    690   695   700
Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser Leu Asn
705   710   715   720
Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg Ser Cys
            725   730   735
Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser Ser Glu
            740   745   750
Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly Thr Tyr
    755   760   765
Arg Ile
770

<210> 48
<211> 982
<212> PRT
<213> Homo sapiens

<400> 48
Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
 1   5   10   15
Pro Arg Lys Gly Arg Ile Leu Gly Ile Ile Asp Ala Ile Gln Asp Ala
            20   25   30
Val Gly Pro Pro Lys Gln Ala Ala Ala Asp Arg Arg Thr Val Glu Lys
        35   40   45
Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
    50   55   60
Leu Gln Leu Lys Asn Ser Pro Pro Tyr Ile Leu Asp Ile Leu Pro Asp
65   70   75   80
Thr Tyr Gln His Leu Arg Leu Ile Leu Ser Lys Tyr Asp Asp Asn Gln
            85   90   95
Lys Leu Ala Gln Leu Ser Glu Asn Glu Tyr Phe Lys Ile Tyr Ile Asp
        100   105   110
Ser Leu Met Lys Lys Ser Lys Arg Ala Ile Arg Leu Phe Lys Glu Gly
        115   120   125
Lys Glu Arg Met Tyr Glu Glu Gln Ser Gln Asp Arg Arg Asn Leu Thr
    130   135   140

```
Lys Leu Ser Leu Ile Phe Ser His Met Leu Ala Glu Ile Lys Ala Ile
145                 150                 155                 160
Phe Pro Asn Gly Gln Phe Gln Gly Asp Asn Phe Arg Ile Thr Lys Ala
            165                 170                 175
Asp Ala Ala Glu Phe Trp Arg Lys Phe Phe Gly Asp Lys Thr Ile Val
            180                 185                 190
Pro Trp Lys Val Phe Arg Gln Cys Leu His Glu Val His Gln Ile Ser
        195                 200                 205
Ser Gly Leu Glu Ala Met Ala Leu Lys Ser Thr Ile Asp Leu Thr Cys
    210                 215                 220
Asn Asp Tyr Ile Ser Val Phe Glu Phe Asp Ile Phe Thr Arg Leu Phe
225                 230                 235                 240
Gln Pro Trp Gly Ser Ile Leu Arg Asn Trp Asn Phe Leu Ala Val Thr
            245                 250                 255
His Pro Gly Tyr Met Ala Phe Leu Thr Tyr Asp Glu Val Lys Ala Arg
            260                 265                 270
Leu Gln Lys Tyr Ser Thr Lys Pro Gly Ser Tyr Ile Phe Arg Leu Ser
        275                 280                 285
Cys Thr Arg Leu Gly Gln Trp Ala Ile Gly Tyr Val Thr Gly Asp Gly
    290                 295                 300
Asn Ile Leu Gln Thr Ile Pro His Asn Lys Pro Leu Phe Gln Ala Leu
305                 310                 315                 320
Ile Asp Gly Ser Arg Glu Gly Phe Tyr Leu Tyr Pro Asp Gly Arg Ser
            325                 330                 335
Tyr Asn Pro Asp Leu Thr Gly Leu Cys Glu Pro Thr Pro His Asp His
            340                 345                 350
Ile Lys Val Thr Gln Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly Ser
        355                 360                 365
Thr Phe Gln Leu Cys Lys Ile Cys Ala Glu Asn Asp Lys Asp Val Lys
    370                 375                 380
Ile Glu Pro Cys Gly His Leu Met Cys Thr Ser Cys Leu Thr Ala Trp
385                 390                 395                 400
Gln Glu Ser Asp Gly Gln Gly Cys Pro Phe Cys Arg Cys Glu Ile Lys
            405                 410                 415
Gly Thr Glu Pro Ile Ile Val Asp Pro Phe Asp Pro Arg Asp Glu Gly
            420                 425                 430
Ser Arg Cys Cys Ser Ile Ile Asp Pro Phe Gly Met Pro Met Leu Asp
        435                 440                 445
Leu Asp Asp Asp Asp Asp Arg Glu Glu Ser Leu Met Met Asn Arg Leu
    450                 455                 460
Ala Asn Val Arg Lys Cys Thr Asp Arg Gln Asn Ser Pro Val Thr Ser
465                 470                 475                 480
Pro Gly Ser Ser Pro Leu Ala Gln Arg Arg Lys Pro Gln Pro Asp Pro
            485                 490                 495
Leu Gln Ile Pro His Leu Ser Leu Pro Pro Val Pro Pro Arg Leu Asp
        500                 505                 510
Leu Ile Gln Lys Gly Ile Val Arg Ser Pro Cys Gly Ser Pro Thr Gly
        515                 520                 525
Ser Pro Lys Ser Ser Pro Cys Met Val Arg Lys Gln Asp Lys Pro Leu
    530                 535                 540
Pro Ala Pro Pro Pro Pro Leu Arg Asp Pro Pro Pro Pro Pro Pro Glu
545                 550                 555                 560
Arg Pro Pro Pro Ile Pro Pro Asp Asn Arg Leu Ser Arg His Ile His
            565                 570                 575
His Val Glu Ser Val Pro Ser Lys Asp Pro Pro Met Pro Leu Glu Ala
            580                 585                 590
Trp Cys Pro Arg Asp Val Phe Gly Thr Asn Gln Leu Val Gly Cys Arg
        595                 600                 605
```

```
Leu Leu Gly Glu Gly Ser Pro Lys Pro Gly Ile Thr Ala Ser Ser Asn
    610                 615             620
Val Asn Gly Arg His Ser Arg Val Gly Ser Asp Pro Val Leu Met Arg
625                 630             635                         640
Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val Phe Ser
                645             650                 655
Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg Leu Ser
                660             665             670
Pro Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys Thr Gly
            675             680             685
Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val Glu Glu
    690             695             700
Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser Leu Asn
705             710             715                         720
Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg Ser Cys
                725             730             735
Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser Ser Glu
                740             745             750
Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly Asp Val
        755             760             765
Phe Asp Ser Ala Ser Asp Pro Val Pro Leu Pro Pro Ala Arg Pro Pro
    770             775             780
Thr Arg Asp Asn Pro Lys His Gly Ser Ser Leu Asn Arg Thr Pro Ser
785             790             795                         800
Asp Tyr Asp Leu Leu Ile Pro Pro Leu Gly Glu Asp Ala Phe Asp Ala
            805             810             815
Leu Pro Pro Ser Leu Pro Pro Pro Pro Pro Ala Arg His Ser Leu
        820             825             830
Ile Glu His Ser Lys Pro Pro Gly Ser Ser Ser Arg Pro Ser Ser Gly
        835             840             845
Gln Asp Leu Phe Leu Leu Pro Ser Asp Pro Phe Val Asp Leu Ala Ser
    850             855             860
Gly Gln Val Pro Leu Pro Pro Ala Arg Arg Leu Pro Gly Glu Asn Val
865             870             875                         880
Lys Thr Asn Arg Thr Ser Gln Asp Tyr Asp Gln Leu Pro Ser Cys Ser
                885             890             895
Asp Gly Ser Gln Ala Pro Ala Arg Pro Pro Lys Pro Arg Pro Arg Arg
            900             905             910
Thr Ala Pro Glu Ile His His Arg Lys Pro His Gly Pro Glu Ala Ala
        915             920             925
Leu Glu Asn Val Asp Ala Lys Ile Ala Lys Leu Met Gly Glu Gly Tyr
    930             935             940
Ala Phe Glu Glu Val Lys Arg Ala Leu Glu Ile Ala Gln Asn Asn Val
945             950             955                         960
Glu Val Ala Arg Ser Ile Leu Arg Glu Phe Ala Phe Pro Pro Pro Val
                965             970             975
Ser Pro Arg Leu Asn Leu
            980
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<210> 49
<211> 982
<212> PRT
<213> Homo sapiens

<400> 49
Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
  1             5                 10                      15
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Pro Arg Lys Gly Arg Ile Leu Gly Ile Ile Asp Ala Ile Gln Asp Ala
        20              25              30
Val Gly Pro Pro Lys Gln Ala Ala Ala Asp Arg Arg Thr Val Glu Lys
        35              40              45
Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
    50              55              60
Leu Gln Leu Lys Asn Ser Pro Pro Tyr Ile Leu Asp Ile Leu Pro Asp
65              70              75              80
Thr Tyr Gln His Leu Arg Leu Ile Leu Ser Lys Tyr Asp Asp Asn Gln
            85              90              95
Lys Leu Ala Gln Leu Ser Glu Asn Glu Tyr Phe Lys Ile Tyr Ile Asp
            100             105             110
Ser Leu Met Lys Lys Ser Lys Arg Ala Ile Arg Leu Phe Lys Glu Gly
        115             120             125
Lys Glu Arg Met Tyr Glu Glu Gln Ser Gln Asp Arg Arg Asn Leu Thr
    130             135             140
Lys Leu Ser Leu Ile Phe Ser His Met Leu Ala Glu Ile Lys Ala Ile
145             150             155             160
Phe Pro Asn Gly Gln Phe Gln Gly Asp Asn Phe Arg Ile Thr Lys Ala
            165             170             175
Asp Ala Ala Glu Phe Trp Arg Lys Phe Phe Gly Asp Lys Thr Ile Val
        180             185             190
Pro Trp Lys Val Phe Arg Gln Cys Leu His Glu Val His Gln Ile Ser
        195             200             205
Ser Ser Leu Glu Ala Met Ala Leu Lys Ser Thr Ile Asp Leu Thr Cys
    210             215             220
Asn Asp Tyr Ile Ser Val Phe Glu Phe Asp Ile Phe Thr Arg Leu Phe
225             230             235             240
Gln Pro Trp Gly Ser Ile Leu Arg Asn Trp Asn Phe Leu Ala Val Thr
            245             250             255
His Pro Gly Tyr Met Ala Phe Leu Thr Tyr Asp Glu Val Lys Ala Arg
            260             265             270
Leu Gln Lys Tyr Ser Thr Lys Pro Gly Ser Tyr Ile Phe Arg Leu Ser
        275             280             285
Cys Thr Arg Leu Gly Gln Trp Ala Ile Gly Tyr Val Thr Gly Asp Gly
    290             295             300
Asn Ile Leu Gln Thr Ile Pro His Asn Lys Pro Leu Phe Gln Ala Leu
305             310             315             320
Ile Asp Gly Ser Arg Glu Gly Phe Tyr Leu Tyr Pro Asp Gly Arg Ser
            325             330             335
Tyr Asn Pro Asp Leu Thr Gly Leu Cys Glu Pro Thr Pro His Asp His
            340             345             350
Ile Lys Val Thr Gln Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly Ser
        355             360             365
Thr Phe Gln Leu Cys Lys Ile Cys Ala Glu Asn Asp Lys Asp Val Lys
    370             375             380
Ile Glu Pro Cys Gly His Leu Met Cys Thr Ser Cys Leu Thr Ala Trp
385             390             395             400
Gln Glu Ser Asp Gly Gln Gly Cys Pro Phe Cys Arg Cys Glu Ile Lys
            405             410             415
Gly Thr Glu Pro Ile Ile Val Asp Pro Phe Asp Pro Arg Asp Glu Gly
        420             425             430
Ser Arg Cys Cys Ser Ile Ile Asp Pro Phe Gly Met Pro Met Leu Asp
        435             440             445
Leu Asp Asp Asp Asp Asp Arg Glu Glu Ser Leu Met Met Asn Arg Leu
    450             455             460
Ala Asn Val Arg Lys Cys Thr Asp Arg Gln Asn Ser Pro Val Thr Ser
465             470             475             480
```

```
Pro Gly Ser Ser Pro Leu Ala Gln Arg Arg Lys Pro Gln Pro Asp Pro
            485                 490             495
Leu Gln Ile Pro His Leu Ser Leu Pro Pro Val Pro Pro Arg Leu Asp
            500             505             510
Leu Ile Gln Lys Gly Ile Val Arg Ser Pro Cys Gly Ser Pro Thr Gly
            515             520             525
Ser Pro Lys Ser Ser Pro Cys Met Val Arg Lys Gln Asp Lys Pro Leu
    530             535             540
Pro Ala Pro Pro Pro Pro Leu Arg Asp Pro Pro Pro Pro Pro Pro Glu
545             550             555             560
Arg Pro Pro Pro Ile Pro Pro Asp Asn Arg Leu Ser Arg His Ile His
            565             570             575
His Val Glu Ser Val Pro Ser Arg Asp Pro Pro Met Pro Leu Glu Ala
            580             585             590
Trp Cys Pro Arg Asp Val Phe Gly Thr Asn Gln Leu Val Gly Cys Arg
            595             600             605
Leu Leu Gly Glu Gly Ser Pro Lys Pro Gly Ile Thr Ala Ser Ser Asn
    610             615             620
Val Asn Gly Arg His Ser Arg Val Gly Ser Asp Pro Val Leu Met Arg
625             630             635             640
Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val Phe Ser
            645             650             655
Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg Leu Ser
            660             665             670
Pro Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys Thr Gly
            675             680             685
Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val Glu Glu
    690             695             700
Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser Leu Asn
705             710             715             720
Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg Ser Cys
            725             730             735
Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser Ser Glu
            740             745             750
Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly Asp Val
            755             760             765
Phe Asp Ser Ala Ser Asp Pro Val Pro Leu Pro Pro Ala Arg Pro Pro
    770             775             780
Thr Arg Asp Asn Pro Lys His Gly Ser Ser Leu Asn Arg Thr Pro Ser
785             790             795             800
Asp Tyr Asp Leu Leu Ile Pro Pro Leu Gly Glu Asp Ala Phe Asp Ala
            805             810             815
Leu Pro Pro Ser Leu Pro Pro Pro Pro Pro Ala Arg His Ser Leu
            820             825             830
Ile Glu His Ser Lys Pro Pro Gly Ser Ser Ser Arg Pro Ser Ser Gly
            835             840             845
Gln Asp Leu Phe Leu Leu Pro Ser Asp Pro Phe Val Asp Leu Ala Ser
    850             855             860
Gly Gln Val Pro Leu Pro Pro Ala Arg Arg Leu Pro Gly Glu Asn Val
865             870             875             880
Lys Thr Asn Arg Thr Ser Gln Asp Tyr Asp Gln Leu Pro Ser Cys Ser
            885             890             895
Asp Gly Ser Gln Ala Pro Ala Arg Pro Pro Lys Pro Arg Pro Arg Arg
            900             905             910
Thr Ala Pro Glu Ile His His Arg Lys Pro His Gly Pro Glu Ala Ala
            915             920             925
Leu Glu Asn Val Asp Ala Lys Ile Ala Lys Leu Met Gly Glu Gly Tyr
    930             935             940
```

```
Ala Phe Glu Glu Val Lys Arg Ala Leu Glu Ile Ala Gln Asn Asn Val
945                 950                 955                 960
Glu Val Ala Arg Ser Ile Leu Arg Glu Phe Ala Phe Pro Pro Pro Val
                965                 970                 975
Ser Pro Arg Leu Asn Leu
                980


<210> 50
<211> 810
<212> PRT
<213> Homo sapiens

<400> 50
Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
 1               5                  10                  15
Pro Arg Lys Gly Arg Ile Leu Gly Ile Ile Asp Ala Ile Gln Asp Ala
            20                  25                  30
Val Gly Pro Pro Lys Gln Ala Ala Ala Asp Arg Arg Thr Val Glu Lys
        35                  40                  45
Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
    50                  55                  60
Leu Gln Leu Lys Asn Ser Pro Pro Tyr Ile Leu Asp Ile Leu Pro Asp
65                  70                  75                  80
Thr Tyr Gln His Leu Arg Leu Ile Leu Ser Lys Tyr Asp Asp Asn Gln
                85                  90                  95
Lys Leu Ala Gln Leu Ser Glu Asn Glu Tyr Phe Lys Ile Tyr Ile Asp
            100                 105                 110
Ser Leu Met Lys Lys Ser Lys Arg Ala Ile Arg Leu Phe Lys Glu Gly
        115                 120                 125
Lys Glu Arg Met Tyr Glu Glu Gln Ser Gln Asp Arg Arg Asn Leu Thr
    130                 135                 140
Lys Leu Ser Leu Ile Phe Ser His Met Leu Ala Glu Ile Lys Ala Ile
145                 150                 155                 160
Phe Pro Asn Gly Gln Phe Gln Gly Asp Asn Phe Arg Ile Thr Lys Ala
                165                 170                 175
Asp Ala Ala Glu Phe Trp Arg Lys Phe Phe Gly Asp Lys Thr Ile Val
            180                 185                 190
Pro Trp Lys Val Phe Arg Gln Cys Leu His Glu Val His Gln Ile Ser
        195                 200                 205
Ser Ser Leu Glu Ala Met Ala Leu Lys Ser Thr Ile Asp Leu Thr Cys
    210                 215                 220
Asn Asp Tyr Ile Ser Val Phe Glu Phe Asp Ile Phe Thr Arg Leu Phe
225                 230                 235                 240
Gln Pro Trp Gly Ser Ile Leu Arg Asn Trp Asn Phe Leu Ala Val Thr
                245                 250                 255
His Pro Gly Tyr Met Ala Phe Leu Thr Tyr Asp Glu Val Lys Ala Arg
            260                 265                 270
Leu Gln Lys Tyr Ser Thr Lys Pro Gly Ser Tyr Ile Phe Arg Leu Ser
        275                 280                 285
Cys Thr Arg Leu Gly Gln Trp Ala Ile Gly Tyr Val Thr Gly Asp Gly
    290                 295                 300
Asn Ile Leu Gln Thr Ile Pro His Asn Lys Pro Leu Phe Gln Ala Leu
305                 310                 315                 320
Ile Asp Gly Ser Arg Glu Gly Phe Tyr Leu Tyr Pro Asp Gly Arg Ser
                325                 330                 335
Tyr Asn Pro Asp Leu Thr Gly Leu Cys Glu Pro Thr Pro His Asp His
            340                 345                 350
```

```
Ile Lys Val Thr Gln Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly Ser
    355                 360                 365
Thr Phe Gln Leu Cys Lys Ile Cys Ala Glu Asn Asp Lys Asp Val Lys
    370                 375                 380
Ile Glu Pro Cys Gly His Leu Met Cys Thr Ser Cys Leu Thr Ala Trp
385                 390                 395                 400
Gln Glu Ser Asp Gly Gln Gly Cys Pro Phe Cys Arg Cys Glu Ile Lys
                405                 410                 415
Gly Thr Glu Pro Ile Ile Val Asp Pro Phe Asp Pro Arg Asp Glu Gly
                420                 425                 430
Ser Arg Cys Cys Ser Ile Ile Asp Pro Phe Gly Met Pro Met Leu Asp
        435                 440                 445
Leu Asp Asp Asp Asp Asp Arg Glu Glu Ser Leu Met Met Asn Arg Leu
    450                 455                 460
Ala Asn Val Arg Lys Cys Thr Asp Arg Gln Asn Ser Pro Val Thr Ser
465                 470                 475                 480
Pro Gly Ser Ser Pro Leu Ala Gln Arg Arg Lys Pro Gln Pro Asp Pro
                485                 490                 495
Leu Gln Ile Pro His Leu Ser Leu Pro Pro Val Pro Pro Arg Leu Asp
                500                 505                 510
Leu Ile Gln Lys Gly Ile Val Arg Ser Pro Cys Gly Ser Pro Thr Gly
        515                 520                 525
Ser Pro Lys Ser Ser Pro Cys Met Val Arg Lys Gln Asp Lys Pro Leu
    530                 535                 540
Pro Ala Pro Pro Pro Pro Leu Arg Asp Pro Pro Pro Pro Pro Pro Glu
545                 550                 555                 560
Arg Pro Pro Pro Ile Pro Pro Asp Asn Arg Leu Ser Arg His Ile His
                565                 570                 575
His Val Glu Ser Val Pro Ser Arg Asp Pro Pro Met Pro Leu Glu Ala
            580                 585                 590
Trp Cys Pro Arg Asp Val Phe Gly Thr Asn Gln Leu Val Gly Cys Arg
        595                 600                 605
Leu Leu Gly Glu Gly Ser Pro Lys Pro Gly Ile Thr Ala Ser Ser Asn
    610                 615                 620
Val Asn Gly Arg His Ser Arg Val Gly Ser Asp Pro Val Leu Met Arg
625                 630         --        635                 640
Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val Phe Ser
                645                 650                 655
Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg Leu Ser
            660                 665                 670
Pro Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys Thr Gly
        675                 680                 685
Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val Glu Glu
    690                 695                 700
Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser Leu Asn
705                 710                 715                 720
Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg Ser Cys
            725                 730                 735
Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser Ser Glu
            740                 745                 750
Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly Asp Val
        755                 760                 765
Phe Asp Ser Ala Ser Asp Pro Val Pro Leu Pro Pro Ala Arg Pro Pro
    770                 775                 780
Thr Arg Asp Asn Pro Lys His Gly Ser Ser Leu Asn Arg Thr Pro Ser
785                 790                 795                 800
Asp Tyr Asp Leu Leu Ile Pro Pro Leu Gly
            805                 810
```

<210> 51
<211> 3373
<212> DNA
<213> Rattus norvegicus

<400> 51
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ttgatgccat tcaggatgca gttggacccc caaagcaagc tgcagctgac cgcaggacag 180
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agatcagctc tggcctggag gccatggctc tgaagtcaac cattgactta acttgtaatg 720
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```

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<210> 52
<211> 3131
<212> DNA
<213> Mus musculus
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<400> 52
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cgtgaagaag agctcgggcg ccggcggcgg cggctctggg ggctcgggag cgggcggcct 180
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ggagacgctt ggagaaaatg agtatttcag ggtgttcatg gaaaatttga tgaagaaaac 480
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aggcatcttt ccgagcggac tcttccaagg agacactttc cggattacta agctgatgc 660
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gcagtggaat gaaaatggag cagctgatgt gtttcattgt tgtattggtc ttaagagtgt 3060
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ccagaaacag c                                                      3131
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<210> 53
<211> 2661
<212> DNA
<213> Drosophila

<400> 53

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gcgtttggtt agcttgtggg ggaaaatcgt acttaagtca ccactactac tacacacggg 180
caccaccagc aacaccaaca acaacaacaa cgagaacagc accagcaaca acaacaacag 240
cagcaagaag gagaagagct gagaagagga agcagaggca gcgcagtcgg cagcgcagcg 300
gcagagagaa aagatggcga cgagaggcag tggaacccgt gtgcaatcgc agccaaagat 360
tttcccatcg ctgctttcca agctgcacgg cgctatctcg gaagcctgcg tctcgcagcg 420
tctgtccacc gacaagaaga cgctggagaa gacctggaag ttgatggaca aggtggtcaa 480
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gctccatgcc aacgagcact tcaacgtgtt catcaacaac ctgatgcgaa agtgcaagcg 660
ggccatcaag ttgttcaagg agggcaagga gaagatgttc gacgagaact cccactaccg 720
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gcttagcaaa gtacatccca taatctccgg cctggaggcc atggccctaa agaccactat 960
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tatttcattt tagtttattg tttaatactt ccaaagatac atttagtttg tagtagcgtg 2460
cgtttacttc cccccccatat caattcaatt ttatttgtaa gcagccaayg cgctgcccta 2520
agactgtaat ttattattaa camaaaaar aaaatcgaaa aagtttaaga aatcaggcta 2580
aacataggag gcctcgaatc gatcgataat ttagttagat tgyatgtaaa ttaattattg 2640
atttcctgtg tcacaaggcc a                                            2661
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<210> 54

<210> 54
<211> 2274
<212> DNA
<213> C. elegans

<400> 54
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caataatgcg cgatttgttc ccagcacaaa caactcgacg gaagcgttga cactcagtcc 180
gagagctgtt cccagcacag tttcactatt cgaaatccca tcagcttcgg agatgcccgg 240
tttctgcagt gaagaggatc gtcgattttt gctcaaagca tgcaagttta tggatcaagt 300
agtgaagagt tgtcatagcc caagactgaa tttgaaaaat cgccgcctt  tcattttgga 360
cattctacct gatacttata cgcatttaat gctgatattc acacaaaaca atgacatact 420
ccaagacaac gactacttga aaatctttct ggagagtatg atcaacaagt gcaaagagat 480
catcaaactg ttcaagacgt cagctatcta caatgaccag tctgaagaac gacggaagct 540
tacgaaaatg tcactaacat tttcacatat gcttttcgag attaaagcat tatttccgga 600
aggtatctat attgaagacc ggtttcggat gacaaagaag gaagccgaaa gcttttggag 660
tcatcatttt acaaaaaaaa acattgtacc ctggtcaaca ttttttactg cattagaaaa 720
gcaccatgga tcaacgatag gaaaaatgga agcagccgaa ttaaaagcta cgatagactt 780
gagcggagat gatttatttt cgaattttga gtttgatgtg tttacaaggt tattctaccc 840
tttcaaaaca ctgatcaaaa attggcaaac actcaccacc gcccatcccg gatactgtgc 900
atttctcaca tacgatgagg tcaaaaaacg gttagaaaaa ttaacgaaaa aacctggaag 960
ctacatcttc cggttatcat gcacacgtcc tggacaatgg gcaataggat acgtagctcc 1020
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tacggagttt tcaggaaacg tttgattttg ttctattcta caatttccat cgcccccaac 2160
ctgtcgtgta ttttctatgt gtcactctga agaaacaag  tttagacttt ttaaaaatcg 2220
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<210> 55
<211> 938
<212> PRT
<213> Rattus norvegicus

<400> 55
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Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
1               5                   10                  15
Pro Arg Lys Gly Arg Ile Leu Gly Ile Ile Asp Ala Ile Gln Asp Ala
            20                  25                  30
Val Gly Pro Pro Lys Gln Ala Ala Ala Asp Arg Arg Thr Val Glu Lys
        35                  40                  45
Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
    50                  55                  60
```

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Leu Gln Leu Lys Asn Ser Pro Pro Tyr Ile Leu Asp Ile Leu Pro Asp
65              70              75                      80
Thr Tyr Gln His Leu Arg Leu Ile Leu Ser Lys Tyr Asp Asp Asn Gln
            85              90                      95
Lys Leu Ala Gln Leu Ser Glu Asn Glu Tyr Phe Lys Ile Tyr Ile Asp
            100             105             110
Ser Leu Met Lys Lys Ser Lys Arg Ala Ile Arg Leu Phe Lys Glu Gly
        115             120             125
Lys Glu Arg Met Tyr Glu Glu Gln Ser Gln Asp Arg Arg Asn Leu Thr
    130             135             140
Lys Leu Ser Leu Ile Phe Ser His Met Leu Ala Glu Ile Lys Ala Ile
145             150             155             160
Phe Pro Asn Gly Gln Phe Gln Gly Asp Asn Phe Arg Ile Thr Lys Ala
            165             170             175
Asp Ala Ala Glu Phe Trp Arg Lys Phe Phe Gly Asp Lys Thr Ile Val
        180             185             190
Pro Trp Lys Val Phe Arg Gln Cys Leu His Glu Val His Gln Ile Ser
        195             200             205
Ser Gly Leu Glu Ala Met Ala Leu Lys Ser Thr Ile Asp Leu Thr Cys
    210             215             220
Asn Asp Tyr Ile Ser Val Phe Glu Phe Asp Ile Phe Thr Arg Leu Phe
225             230             235             240
Gln Pro Trp Gly Ser Ile Leu Arg Asn Trp Asn Phe Leu Ala Val Thr
            245             250             255
His Pro Gly Tyr Met Ala Phe Leu Thr Tyr Asp Glu Val Lys Ala Arg
            260             265             270
Leu Gln Lys Tyr Ser Thr Lys Pro Gly Ser Tyr Ile Phe Arg Leu Ser
        275             280             285
Cys Thr Arg Leu Gly Gln Trp Ala Ile Gly Tyr Val Thr Gly Asp Gly
    290             295             300
Asn Ile Leu Gln Thr Ile Pro His Asn Lys Pro Leu Phe Gln Ala Leu
305             310             315             320
Ile Asp Gly Ser Arg Glu Gly Phe Tyr Leu Tyr Pro Asp Gly Arg Ser
            325             330             335
Tyr Asn Pro Asp Leu Thr Gly Leu Cys Glu Pro Thr Pro His Asp His
            340             345             350
Ile Lys Val Thr Gln Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly Ser
        355             360             365
Thr Phe Gln Leu Cys Lys Ile Cys Ala Glu Asn Asp Lys Asp Val Lys
    370             375             380
Ile Glu Pro Cys Gly His Leu Met Cys Thr Ser Cys Leu Thr Ala Trp
385             390             395             400
Gln Glu Ser Asp Gly Gln Gly Cys Pro Phe Cys Arg Cys Glu Ile Lys
            405             410             415
Gly Thr Glu Pro Ile Ile Val Asp Pro Phe Asp Pro Arg Asp Glu Gly
            420             425             430
Ser Arg Cys Cys Ser Ile Ile Asp Pro Phe Ser Ile Pro Met Leu Asp
        435             440             445
Leu Asp Asp Asp Asp Asp Arg Glu Glu Ser Leu Met Met Asn Arg Leu
    450             455             460
Ala Ser Val Arg Lys Cys Thr Asp Arg Gln Asn Ser Pro Val Thr Ser
465             470             475             480
Pro Gly Ser Ser Pro Leu Ala Gln Arg Arg Lys Pro Gln Pro Asp Pro
            485             490             495
Leu Gln Ile Pro His Leu Ser Leu Pro Pro Val Pro Pro Arg Leu Asp
        500             505             510
Leu Ile Gln Lys Gly Ile Val Arg Ser Pro Cys Gly Ser Pro Thr Gly
        515             520             525
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Ser Pro Lys Ser Ser Pro Cys Met Val Arg Lys Gln Asp Lys Pro Leu
    530   535   540
Pro Ala Pro Pro Pro Pro Leu Arg Asp Pro Pro Pro Pro Pro Glu Arg
545   550   555   560
Pro Pro Pro Ile Pro Pro Asp Ser Arg Leu Ser Arg His Phe His His
            565   570   575
Gly Glu Ser Val Pro Ser Arg Asp Gln Pro Met Pro Leu Glu Ala Trp
        580   585   590
Cys Pro Arg Asp Ala Phe Gly Thr Asn Gln Val Met Gly Cys Arg Ile
    595   600   605
Leu Gly Asp Gly Ser Pro Lys Pro Gly Val Thr Ala Asn Ser Asn Leu
    610   615   620
Asn Gly Arg His Ser Arg Met Gly Ser Asp Gln Val Leu Met Arg Lys
625   630   635   640
His Arg Arg His Asp Leu Pro Ser Glu Gly Ala Lys Val Phe Ser Asn
            645   650   655
Gly His Leu Ala Pro Glu Glu Tyr Asp Val Pro Pro Arg Leu Ser Pro
        660   665   670
Pro Pro Pro Val Thr Ala Leu Leu Pro Ser Ile Lys Cys Thr Gly Pro
    675   680   685
Ile Ala Asn Cys Leu Ser Glu Lys Thr Arg Asp Thr Val Glu Glu Asp
    690   695   700
Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser Leu Asn Ser
705   710   715   720
Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg Ser Cys Asp
            725   730   735
Asn Gly His Cys Ile Leu Asn Gly Thr His Gly Thr Pro Ser Glu Met
        740   745   750
Lys Lys Ser Asn Ile Pro Asp Leu Gly Ile Tyr Leu Lys Gly Glu Asp
    755   760   765
Ala Phe Asp Ala Leu Pro Pro Ser Leu Pro Pro Pro Pro Pro Pro Ala
    770   775   780
Arg His Ser Leu Ile Glu His Ser Lys Pro Pro Gly Ser Ser Ser Arg
785   790   795   800
Pro Ser Ser Gly Gln Asp Leu Phe Leu Leu Pro Ser Asp Pro Phe Phe
            805   810   815
Asp Pro Ala Ser Gly Gln Val Pro Leu Pro Pro Ala Arg Arg Ala Pro
        820   825   830
Gly Asp Gly Val Lys Ser Asn Arg Ala Ser Gln Asp Tyr Asp Gln Leu
        835   840   845
Pro Ser Ser Ser Asp Gly Ser Gln Ala Pro Ala Arg Pro Pro Lys Pro
    850   855   860
Arg Pro Arg Arg Thr Ala Pro Glu Ile His His Arg Lys Pro His Gly
865   870   875   880
Pro Glu Ala Ala Leu Glu Asn Val Asp Ala Lys Ile Ala Lys Leu Met
            885   890   895
Gly Glu Gly Tyr Ala Phe Glu Glu Val Lys Arg Ala Leu Glu Ile Ala
        900   905   910
Gln Asn Asn Leu Glu Val Ala Arg Ser Ile Leu Arg Glu Phe Ala Phe
        915   920   925
Pro Pro Pro Val Ser Pro Arg Leu Asn Leu
    930   935

<210> 56
<211> 913
<212> PRT
<213> Mus musculus

<400> 56

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Met Ala Gly Asn Val Lys Lys Ser Ser Gly Ala Gly Gly Gly Ser
 1               5                  10               15
Gly Gly Ser Gly Ala Gly Gly Leu Ile Gly Leu Met Lys Asp Ala Phe
            20              25                  30
Gln Pro His His His His His His Leu Ser Pro His Pro Pro Cys Thr
            35                  40                  45
Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp Lys Val
    50                  55                  60
Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser Pro Pro
65                  70                  75                  80
Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg Thr Val
            85                  90                  95
Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn Glu Tyr
            100                 105                 110
Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln Thr Ile
            115                 120                 125
Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn Ser Gln
    130                 135                 140
Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His Met Leu
145                 150                 155                 160
Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly Asp Thr
            165                 170                 175
Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys Ala Phe
            180                 185                 190
Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala Leu His
            195                 200                 205
Glu Val His Pro Ile Ser Ser Gly Leu Asp Ala Met Ala Leu Lys Ser
    210                 215                 220
Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu Phe Asp
225                 230                 235                 240
Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg Asn Trp
            245                 250                 255
Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu Thr Tyr
            260                 265                 270
Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro Gly Ser
            275                 280                 285
Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala Ile Gly
            290                 295                 300
Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His Asn Lys
305                 310                 315                 320
Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe Tyr Leu
            325                 330                 335
Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu Cys Glu
            340                 345                 350
Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr Glu Leu
            355                 360                 365
Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys Ala Glu
    370                 375                 380
Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met Cys Thr
385                 390                 395                 400
Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys Pro Phe
            405                 410                 415
Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp Pro Phe
            420                 425                 430
Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu Gly Ala
            435                 440                 445
Pro Ser Pro Asn Tyr Asp Asp Asp Asp Glu Arg Ala Asp Asp Ser
    450                 455                 460
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Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg Pro Ser
465             470             475             480
Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val Pro Pro
            485             490             495
Arg Leu Asp Leu Leu Gln Gln Arg Ala Pro Val Pro Ala Ser Thr Ser
        500             505             510
Val Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His Lys Asp
        515             520             525
Lys Pro Leu Pro Ile Pro Pro Thr Leu Arg Asp Leu Pro Pro Pro Pro
    530             535             540
Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Thr Arg Pro Gln Arg
545             550             555             560
Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp Lys Leu
            565             570             575
Pro Pro Val Pro Ser Ser Arg Pro Gly Asp Ser Trp Leu Ser Arg Pro
        580             585             590
Ile Pro Lys Val Pro Val Ala Thr Pro Asn Pro Gly Asp Pro Trp Asn
        595             600             605
Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu Pro Ser
    610             615             620
Gln Met Glu Pro Arg Ala Asp Val Pro Arg Leu Gly Ser Thr Phe Ser
625             630             635             640
Leu Asp Thr Ser Met Thr Met Asn Ser Ser Pro Val Ala Gly Pro Glu
            645             650             655
Ser Glu His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala Ile Tyr
        660             665             670
Ser Leu Ala Ala Arg Pro Leu Pro Met Pro Lys Leu Pro Pro Gly Glu
        675             680             685
Gln Gly Glu Ser Glu Glu Asp Thr Glu Tyr Met Thr Pro Thr Ser Arg
    690             695             700
Pro Val Gly Val Gln Lys Pro Glu Pro Lys Arg Pro Leu Glu Ala Thr
705             710             715             720
Gln Ser Ser Arg Ala Cys Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr
            725             730             735
Tyr Glu Ala Met Tyr Asn Ile Gln Ser Gln Ala Leu Ser Val Ala Glu
            740             745             750
Asn Ser Ala Ser Gly Glu Gly Asn Leu Ala Thr Ala His Thr Ser Thr
        755             760             765
Gly Pro Glu Glu Ser Glu Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys
    770             775             780
Pro Pro Val Pro Ala Val Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser
785             790             795             800
Asn Ala Ser Ser Ser Phe Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr
            805             810             815
Asn Phe Asn Glu Gly Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe
        820             825             830
Pro Arg Arg Ile Asn Ser Glu Arg Lys Ala Ser Ser Tyr Gln Gln Gly
        835             840             845
Gly Gly Ala Thr Ala Asn Pro Val Ala Thr Ala Pro Ser Pro Gln Leu
    850             855             860
Ser Ser Glu Ile Glu Arg Leu Met Ser Gln Gly Tyr Ser Tyr Gln Asp
865             870             875             880
Ile Gln Lys Ala Leu Val Ile Ala His Asn Asn Ile Glu Met Ala Lys
            885             890             895
Asn Ile Leu Arg Glu Phe Val Ser Ile Ser Ser Pro Ala His Val Ala
            900             905             910
Thr
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<210> 57
<211> 448
<212> PRT
<213> Drosophila

<400> 57
Met Ala Thr Arg Gly Ser Gly Thr Arg Val Gln Ser Gln Pro Lys Ile
1   5   10   15
Phe Pro Ser Leu Leu Ser Lys Leu His Gly Ala Ile Ser Glu Ala Cys
            20   25   30
Val Ser Gln Arg Leu Ser Thr Asp Lys Lys Thr Leu Glu Lys Thr Trp
        35   40   45
Lys Leu Met Asp Lys Val Val Lys Leu Cys Gln Gln Pro Lys Met Asn
    50   55   60
Leu Lys Asn Ser Pro Pro Phe Ile Leu Asp Ile Leu Pro Asp Thr Tyr
65   70   75   80
Gln Arg Leu Arg Leu Ile Tyr Ser Lys Lys Glu Asp Gln Met His Leu
                85   90   95
Leu His Ala Asn Glu His Phe Asn Val Phe Ile Asn Asn Leu Met Arg
            100   105   110
Lys Cys Lys Arg Ala Ile Lys Leu Phe Lys Glu Gly Lys Glu Lys Met
            115   120   125
Phe Asp Glu Asn Ser His Tyr Arg Arg Asn Leu Thr Lys Leu Ser Leu
    130   135   140
Val Phe Ser His Met Leu Ser Glu Leu Lys Ala Ile Phe Pro Asn Gly
145   150   155   160
Val Phe Ala Gly Asp Gln Phe Arg Ile Thr Lys Ala Asp Ala Ala Asp
                165   170   175
Phe Trp Lys Ser Asn Phe Gly Asn Ser Thr Leu Val Pro Trp Lys Ile
            180   185   190
Phe Arg Gln Glu Leu Ser Lys Val His Pro Ile Ile Ser Gly Leu Glu
            195   200   205
Ala Met Ala Leu Lys Thr Thr Ile Asp Leu Thr Cys Asn Asp Phe Ile
    210   215   220
Ser Asn Phe Glu Phe Asp Val Phe Thr Arg Leu Phe Gln Pro Trp Val
225   230   235   240
Thr Leu Leu Arg Asn Trp Gln Ile Leu Ala Val Thr His Pro Gly Tyr
                245   250   255
Val Ala Phe Leu Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Arg Tyr
            260   265   270
Ile Leu Lys Ala Gly Ser Tyr Val Phe Arg Leu Ser Cys Thr Arg Leu
            275   280   285
Gly Gln Trp Ala Ile Gly Tyr Val Thr Ala Glu Gly Glu Ile Leu Gln
    290   295   300
Thr Ile Pro Gln Asn Lys Ser Leu Cys Gln Ala Leu Leu Asp Gly His
305   310   315   320
Arg Glu Gly Phe Tyr Leu Tyr Pro Asp Gly Gln Ala Tyr Asn Pro Asp
                325   330   335
Leu Ser Ser Ala Val Gln Ser Pro Thr Glu Asp His Ile Thr Val Thr
            340   345   350
Gln Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu
            355   360   365
Cys Lys Ile Cys Ala Glu Asn Asp Lys Asp Ile Arg Ile Glu Pro Cys
    370   375   380
Gly His Leu Leu Cys Thr Pro Cys Leu Thr Ser Trp Gln Val Asp Ser
385   390   395   400
Glu Gly Gln Gly Cys Pro Phe Cys Arg Ala Glu Ile Lys Gly Thr Glu
                405   410   415

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Gln Ile Val Val Asp Ala Phe Asp Pro Arg Lys Gln His Asn Arg Asn
         420                 425                 430
Val Thr Asn Gly Arg Gln Gln Gln Gln Glu Glu Asp Asp Thr Glu Val
         435                 440                 445


<210> 58
<211> 582
<212> PRT
<213> C. elegans

<400> 58
Met Gly Ser Ile Asn Thr Ile Phe His Arg Ile His Arg Phe Val Asn
 1               5                  10                  15
Gly Thr Gly Asn Asn Ala Arg Phe Val Pro Ser Thr Asn Asn Ser Thr
         20                  25                  30
Glu Ala Leu Thr Leu Ser Pro Arg Ala Val Pro Ser Thr Val Ser Leu
         35                  40                  45
Phe Glu Ile Pro Ser Ala Ser Glu Met Pro Gly Phe Cys Ser Glu Glu
     50                  55                  60
Asp Arg Arg Phe Leu Leu Lys Ala Cys Lys Phe Met Asp Gln Val Val
65                  70                  75                  80
Lys Ser Cys His Ser Pro Arg Leu Asn Leu Lys Asn Ser Pro Pro Phe
                 85                  90                  95
Ile Leu Asp Ile Leu Pro Asp Thr Tyr Thr His Leu Met Leu Ile Phe
             100                 105                 110
Thr Gln Asn Asn Asp Ile Leu Gln Asp Asn Asp Tyr Leu Lys Ile Phe
         115                 120                 125
Leu Glu Ser Met Ile Asn Lys Cys Lys Glu Ile Ile Lys Leu Phe Lys
     130                 135                 140
Thr Ser Ala Ile Tyr Asn Asp Gln Ser Glu Glu Arg Arg Lys Leu Thr
145                 150                 155                 160
Lys Met Ser Leu Thr Phe Ser His Met Leu Phe Glu Ile Lys Ala Leu
             165                 170                 175
Phe Pro Glu Gly Ile Tyr Ile Glu Asp Arg Phe Arg Met Thr Lys Lys
             180                 185                 190
Glu Ala Glu Ser Phe Trp Ser His His Phe Thr Lys Lys Asn Ile Val
         195                 200                 205
Pro Trp Ser Thr Phe Phe Thr Ala Leu Glu Lys His His Gly Ser Thr
     210                 215                 220
Ile Gly Lys Met Glu Ala Ala Glu Leu Lys Ala Thr Ile Asp Leu Ser
225                 230                 235                 240
Gly Asp Asp Phe Ile Ser Asn Phe Glu Phe Asp Val Phe Thr Arg Leu
             245                 250                 255
Phe Tyr Pro Phe Lys Thr Leu Ile Lys Asn Trp Gln Thr Leu Thr Thr
             260                 265                 270
Ala His Pro Gly Tyr Cys Ala Phe Leu Thr Tyr Asp Glu Val Lys Lys
         275                 280                 285
Arg Leu Glu Lys Leu Thr Lys Lys Pro Gly Ser Tyr Ile Phe Arg Leu
         290                 295                 300
Ser Cys Thr Arg Pro Gly Gln Trp Ala Ile Gly Tyr Val Ala Pro Asp
305                 310                 315                 320
Gly Lys Ile Tyr Gln Thr Ile Pro Gln Asn Lys Ser Leu Ile Gln Ala
             325                 330                 335
Leu His Glu Gly His Lys Glu Gly Phe Tyr Ile Tyr Pro Asn Gly Arg
         340                 345                 350
Asp Gln Asp Ile Asn Leu Ser Lys Leu Met Asp Val Pro Gln Ala Asp
         355                 360                 365
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```
Arg Val Gln Val Thr Ser Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly
    370             375             380
Thr Thr Phe Glu Leu Cys Lys Ile Cys Asp Asp Asn Glu Lys Asn Ile
385             390             395             400
Lys Ile Glu Pro Cys Gly His Leu Leu Cys Ala Lys Cys Leu Ala Asn
            405             410             415
Trp Gln Asp Ser Asp Gly Gly Gly Asn Thr Cys Pro Phe Cys Arg Tyr
            420             425             430
Glu Ile Lys Gly Thr Asn Arg Val Ile Ile Asp Arg Phe Lys Pro Thr
            435             440             445
Pro Val Glu Ile Glu Lys Ala Lys Asn Val Ala Ala Ala Glu Lys Lys
    450             455             460
Leu Ile Ser Leu Val Pro Asp Val Pro Pro Arg Thr Tyr Val Ser Gln
465             470             475             480
Cys Ser Gln Ser Leu Leu His Asp Ala Ser Asn Ser Ile Pro Ser Val
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Asp Glu Leu Pro Leu Val Pro Pro Pro Leu Pro Pro Lys Ala Leu Gly
            500             505             510
Thr Leu Asp Thr Leu Asn Ser Ser Gln Thr Ser Ser Ser Tyr Val Asn
            515             520             525
Ile Lys Glu Leu Glu Asn Val Glu Thr Ser Gly Glu Ala Leu Ala Gln
    530             535             540
Val Val Asn Arg Gln Arg Ala Pro Ser Ile Gln Ala Pro Pro Leu Pro
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Thr Asn Ser Glu Arg Glu Glu
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